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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,827	06/30/2000	Peter Schwarz	548.0011USU	2208
7590 05/04/2005			EXAMINER	
Charles N. J. Ruggiero Ohlandt, Greeley, Ruggiero & Perle, L.L.P. One Landmark Square Stamford, CT 06901-2682			STOCK JR, GORDON J	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/607,827

Applicant(s)

SCHWARZ ET AL.

Examiner

Gordon J. Stock

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. **Claims 39-42, 44, 45, 49, 50, 52, 54, 56, 58, 60, 64, 66, and 68** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Steenhoek (4,917,495)**.

As for **claims 39-42, 44, 45, 49, 50, 52, 54, 56, 58, 60, and 64** Steenhoek in a portable colorimeter discloses the following: a halogen source at a first predetermined angle to the surface, said emitted light having a light intensity over the entire visible spectral range (Figs. 1 and 9); a photosensor aligned at a second predetermined angle to the surface and generating a signal based on reflected light (Fig. 1; 18); filters arranged between light diode and/or photosensors, blue and red filters (col. 6, lines 55-65) and the system comprises daylight spectra (col. 8, lines 1-15) and the system utilizes a sensitivity of the human eye (col. 7, lines 65-69). In addition, Steenhoek suggests that colorimetric systems with filters wish to have an aggregate spectra of light diode and photosensor and filter correspond to daylight spectrum and eye sensitivity if the illuminant has a daylight spectrum (col. 4, lines 58-69). Steenhoek discloses a controller to derive a characteristic (Fig. 2). As for gloss being determined, the system is angled at the specular angle of 45 degrees (col. 5, lines 35-50). Also three characteristics are found (col. 9, lines 10-16) which are perceptual color values (col. 4, lines 45-50). Three light sources, three halogen lamps, are used (Fig. 1) and a plurality of photosensors that are at least three elements are adjacent to each other (Fig. 1, 18; Fig. 2, 18). The angles used are the following: 0, -30, and 65 degrees (col. 5, lines 35-50). In addition, color temperature is controlled and corrected and a

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temperature monitor is used (col. 6, lines 65-67; col. 7, lines 1-5 and lines 40-49). As for relative movement, to change between twelve standard ceramic tiles (col. 9, lines 23-35), movement must be performed.

As for a diode having intensity over the entire visible range and a second diode, Steenhoek is silent. However, a diode having intensity over the entire visible range is a white light source. And halogen sources are also white light sources. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to substitute the three halogen sources with three white diodes, for they are both functionally equivalent as white light sources.

As for **claims 66 and 68**, Steenhoek discloses everything as above (see claims 39 and 56). He does not explicitly state that the angles of the light sources do not vary over time. However, he suggests it, for he states that the predetermined angles, -30 degrees, 0 degrees, and 65 degrees, of the light sources are optimal angles to give maximum color information with minimal measurement effort (col. 6, lines 45-50; col. 5, lines 28-45). It would be obvious to one of ordinary skill in the art at the time the invention was made to have the predetermined angles not vary in time in order to guarantee accurate color measurements with maximum color information.

3. **Claims 43 and 59** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Steenhoek (4,917,495)** in view of **Weber et al. (5,268,749)**

As for **claims 43 and 59**, Steenhoek discloses everything as above (see **claims 39 and 56** above). However, he is silent concerning a scatter disk arrangement. Weber in an apparatus for providing uniform illumination teaches using a scatter disk, a diffuser in front of annular stop, to

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illuminate a sample plane uniformly (col. 10, lines 35-50). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use a diffuser in order to uniformly illuminate the sample.

4. **Claims 46-48 and 61-63** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Steenhoek (4,917,495)** in view of **Ohkubo (5,619,427)**.

As for **claims 46-48 and 61-63**, Steenhoek discloses everything as above (see **claims 39 and 56** above). In addition, Steenhoek discloses receiving perceptual values from color coordinates (col. 4, lines 1-45). He is silent concerning a light pattern. Ohkubo in a color conversion method teaches using a light/dark edge grid pattern in order to get color coordinates (Fig. 4; col. 6, lines 35-50). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a grid like pattern in order to determine stimulus signal from optical signals.

5. **Claim 51** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Steenhoek (4,917,495)** in view of **Klenk et al. (4,918,321)**.

As to **claim 51**, Steenhoek discloses everything as above (see **claim 39** above). However, he is silent concerning emitting a strip of light perpendicular to the direction of propagation. Klenk in a reflected light scanning method teaches using strips of light to illuminate surface in order to better profile matt surfaces (col. 1, lines 1-15 and lines 53-68). Therefore, it would be obvious to one skilled in the art at the time the invention was made to emit strips of light in order to better profile matt surfaces.

6. **Claim 53** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Steenhoek (4,917,495)** in view of **Lex (5,596,412)**.

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As to **claim 53**, Steenhoek discloses everything as above (see **claim 39**). However, he does not teach a measurement wheel positioned on surface. Lex in a device for physiological assessment of reflective surfaces teaches using a measurement wheel coupled to a rotating angle output device in order to determine the exact geometric relationship of the measuring points on the surface (col. 2, lines 55-64; col. 6, lines 55-67; col. 7, lines 1-30). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the system comprise a measurement wheel coupled to a rotating angle output device in order to determine the exact geometric relationship of the measuring points on the surface being studied.

7. **Claims 55 and 57** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Steenhoek (4,917,495)** in view of the applicant's disclosure of prior art.

As for **claims 55 and 57**, Steenhoek discloses everything as above (see **claim 39 and 56**). As for the measuring cycle, he is silent concerning the measurement cycle being less than .2 seconds. However, the applicant's disclosure teaches prior art of a measurement cycle taking less than .2 seconds (page 5, line 27). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the measurement cycle be less than .2 seconds, for measurement cycles with light emitting diodes are typically less than .2 seconds in order to shorten the time it takes to measure samples.

8. **Claims 65 and 67** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Steenhoek (4,917,495)** in view of **Chen et al. (6,163,038)**.

As for **claims 65 and 67**, Steenhoek discloses everything as above (see **claims 39 and 56**). In addition, Steenhoek discloses the light emitting members, filaments, of the halogen sources are at a precisely defined position within the light source that defines the light path to the

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sample surface (three lines bisecting lamps through filaments and defining 65 degrees and -30 degrees in Fig. 1). He does not explicitly state that the defined position does not vary over time. However, he suggests it, for he states that the predetermined angles, -30 degrees, 0 degrees, and 65 degrees, of the light sources are optimal angles to give maximum color information with minimal measurement effort (col. 6, lines 45-50; col. 5, lines 28-45). It would be obvious to one of ordinary skill in the art at the time the invention was made to have the light emitting member's defined position not vary in time in order to guarantee accurate color measurements with maximum color information. However, as for a light diode comprising a light emitting member with a precisely defined position that does not vary over time, he is silent. However, Chen in a white led teaches that light emitting members are at a precise position to ensure white light emission through proper overlap of emitting layers (Fig. 8, 64-65; col. 5, lines 30-55). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the white led have a light emitting member at a precise location within the light diode that does not vary in time in order to have consistent overlap of wavelengths for constant white light emission.

Response to Arguments

9. Applicant's arguments filed February 16, 2005 have been fully considered but they are not persuasive. As for the arguments that a decisive advantage of a light diode over a halogen source is that the light diode's position and amount of emitted light is precisely defined is not persuasive in view of Steenhoek and that Steenhoek would not suggest to having the light diode aligned at a first predetermined angle to the surface is not persuasive for Steenhoek aligns the halogen sources at precise angles that are defined by a line bisecting the light sources through

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their individual filaments (Fig. 1: 11a-11c). And the amount of light emitted is defined (Fig. 9) and defined by the dimensions of the lens to focus the light (Fig. 1: 12a-12c). Also Steenhoek does not explicitly state that the angles of the light sources do not vary over time. However, he suggests it, for he states that the predetermined angles, -30 degrees, 0 degrees, and 65 degrees, of the light sources are optimal angles to give maximum color information with minimal measurement effort (col. 6, lines 45-50; col. 5, lines 28-45). It would be obvious to one of ordinary skill in the art at the time the invention was made to have the predetermined angles not vary in time in order to guarantee accurate color measurements with maximum color information. And again, as for a diode having intensity over the entire visible range, Steenhoek is silent. However, a diode having intensity over the entire visible range is a white light source. And halogen sources are also white light sources. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to substitute the halogen source with a white diode, for they are both functionally equivalent as white light sources.

As for the argument concerning the conventional quartz halogen lamp not necessarily being obvious as the functional equivalent of the claimed light diode, Examiner disagrees for the diode as claimed in claim 39 is “a light diode aligned at a first predetermined angle to the surface, said light diode emitting an emitted light at the surface, said emitted light having a light intensity over the entire visible spectral range” and claim 56 has “aligning a light diode at a first predetermined angle to the surface and controlling said light diode to emit an emitted light in the visible spectrum at the surface.” Steenhoek discloses halogen sources aligned at predetermined angles to the surface (Fig. 1: 11a-11c). Halogen sources are white light sources (Fig. 9). A diode having intensity over the entire visible range is a white light source. Therefore, it would

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be obvious to one of ordinary skill in the art at the time the invention was made to substitute the three halogen sources with three white diodes, for they are both functionally equivalent as white light sources. The diode as claimed does not differentiate itself from any other white light source that is angled such as the halogen source of Steenhoek.

As for the arguments concerning claims 55 and 57, Examiner disagrees for the disclosure uses the statement "an LED typically takes less than .2 seconds" on page 5 line 27 which admits that this fact is common knowledge in the art by using the term, "typically." In addition, on lines 23-28 of page 5 it is stated that "a typical light bulb requires at least 1 to 1.5 seconds" and "a light emitting diode only about .1 to .2 seconds;" whereas, a light bulb has a measurement cycle of 1.5 to 2 seconds. Since the bulb requires at least 1 second to attain a stable emission, and the led takes at least .1 seconds, the led is at least 10 times faster. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made that the measurement cycle of the led is less than .2 seconds such as .15 seconds, for the led is at least ten times faster than a typical light bulb which has a measurement cycle of at least 1.5 seconds.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 872-9306

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

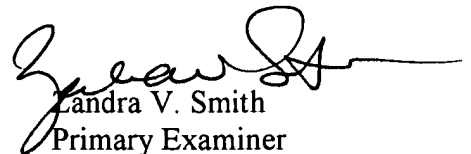
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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gs

April, 2005



Sandra V. Smith

Primary Examiner

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